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CONSIDERATIONS IN ESTABLISHING A FRUIT STORAGE AND MARKETING FACILITY AND A CHILE PROCESSING PLANT IN THE ESPANOLA VALLEY, NEW MEXICO

by

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FARMER COOPERATIVE SERVICE
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Joseph G. Knapp, Administrator

The Farmer Cooperative Service conducts research studies and service activities of assistance to farmers in connection with cooperatives engaged in marketing farm products, purchasing farm supplies, and supplying business services. The work of the Service relates to problems of management, organization, policies, merchandising, product quality, costs, efficiency, financing, and membership.

The Service publishes the results of such studies; confers and advises with officials of farmer cooperatives; and works with educational agencies, cooperatives, and others in the dissemination of information relating to cooperative principles and practices.

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Considerations in Establishing a Fruit Storage and Marketing Facility and a Chile Processing Plant in the Espanola Valley, New Mexico

by

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Sponsors of the Northern Rio Grande Resource Conservation and Development Project (RC&D) prepared a general work plan in accordance with the authority granted by the Secretary of Agriculture in February 1964, as a part of Rural Area Development.

The overall project area covers approximately 2.9 million acres in the north central portion of New Mexico.

The primary objective of the plan was to outline a course of action to develop, improve, conserve and utilize the area's natural resources in order to increase income and expand the employment and other economic opportunities for the people in this low income area.

In the development of this plan, over 100 projects have been proposed to the sponsors' steering committee including proposals to establish a fruit storage and marketing facility and a chile processing plant.

Recognizing the need for additional economic appraisal relating to the fruit and chile crops grown in the Espanola Valley of New Mexico, Herbert Quintana, Chairman of the Steering Committee, Northern Rio Grande RC&D project, formally requested the assistance of the Farmer Cooperative Service, U.S. Department of Agriculture, Washington, D. C.

This report, prepared in response to the request, appraises the supply and marketing aspects of fruit and chile grown in the Espanola Valley. It will serve as a guideline to interested growers in evaluating the potentials of proposed cooperative or other business type processing and marketing facilities for these crops.

Farmers in north central New Mexico have made relatively little progress over the years in improving production and marketing methods for their fruit and vegetable crops.

An example of this is the chile crop, which has been produced and marketed in the same manner for decades. Chile is still planted and harvested entirely by hand labor with the minimum labor requirements estimated at 35 man-days an acre. The marketing method for the product is essentially a retail operation of peddling at local stores and on a house to house basis.

I conferred with project leaders, personnel from the State Extension Service and the University of New Mexico State, representatives of the Cooperative Council of New Mexico, and other knowledgeable persons in northern New Mexico. They provided information on the proposed projects and background on trends and changes in the area's agriculture.

Additional information relating to the proposed projects was obtained from Phil Lavato, Project Coordinator, Soil Conservation Service, and Gene Ott, Extension and Business Management Specialist at New Mexico State University.

I also acquired considerable information through personal interviews with the county agents of the State Extension Service for the respective counties of Rio Arriba, Sante Fe, and Taos. These agents are of Spanish-American origin and each has approximately 17 years' experience in working closely with the chile and fruit growers in the Espanola Valley. They believe that the growers at this time are somewhat hesitant to go the cooperative way in establishing a processing plant for chile and a packing shed and cold storage facilities for fruit.

This hesitancy stems in part from the past failures of fruit packing cooperatives in this area. Poor planning, excessive risk sharing, and short supplies resulting from unfavorable weather conditions were factors in the ultimate collapse of these early ventures. The most recent failure was the Truchas Peak Cooperative, organized primarily as an apple packing shed for the Espanola Valley.

PROPOSED FRUIT PACKING AND STORAGE PLANT IN THE ESPANOLA VALLEY, NEW MEXICO

The Velarde Fruit Growers Association applied to the Northern Rio Grande Resource and Development Committee for assistance in establishing a fruit packing and storage plant. The association listed the following reasons why packing and storage facilities are needed in their area:

1. The existing packing shed has been destroyed by fire.
2. Construction and maintenance of a packing house would stimulate the progress of the area and local economy by using local labor.
3. The area can produce up to 800,000 bushels of fruit a year.
4. The facilities would help provide fruit of a quality that commercial buyers would pay premium prices for.
5. It would help to establish sales outlets and improve conditions for marketing of fruits.
6. The 41,000 producing trees and the 25,000 coming into production require that a packing shed be established as soon as possible.
7. A cold storage facility in the area would mean that the growers could store their fruit rather than dump it on the market, thus depressing prices.

Acreage and Production Statistics

The RC&D project work plan published August 1964 reported that there were approximately 4,900 acres of orchards in the Espanola area. About 75 percent of this acreage was in apples, 15 percent in peaches, and the remaining 10 percent in pears, cherries, and apricots. It was further estimated that about three-fourths of the area's apple acreage was in commercial orchards which would currently approximate 2,800 acres.

The remaining discussion in this section will be for apples alone, since further data for other fruit are not available. However, proposed facilities may be used for the small amount of other fruit.

The irrigated valleys in the vicinity of Espanola are the largest apple growing area in New Mexico. The area has 56 percent of the orchards and 41 percent of the trees in the State (table 1). Producers in this area have more new plantings (approximately 10,000 trees a year) than those in other apple producing areas of the State. Data in Table 1 are for the fall of 1962 while those in the project work plan cited in the preceding paragraph are for 1964.

Table 1. - New Mexico apples, commercial crop: Number of acres, orchards and trees in the Espanola Valley and total for State, 1963 1/

Area	Number of acres	Orchards		Trees		Average number	
		Number	Percent of State total	Number	Percent of State total	Trees per orchard	Trees per acre
Rio Arriba	2,080	398	42	113,300	34	285	54
Sante Fe	460	133	14	24,100	7	181	52
Total (Espanola Valley)	2,540	531	56	137,400	41	259	54
State total	7,000	950	100	330,000	100	347	47

1/ Survey made by New Mexico Crop and Livestock Service in the fall of 1962.

Table 2 shows the commercial production of apples over a 10-year period in the State and points up the sharp variation in production resulting from late spring frost, hail, and the like.

The variations in production by areas are even more significant as the freeze pattern in the apple producing counties varies considerably over the years. For example, the 1959 Census of Agriculture reported a total production of 105,664 bushels of apples from 61,053 bearing trees in the Espanola Valley of New Mexico as compared with 233,514 bushels produced from 65,709 trees in 1954.

Table 2 - Apples, commercial crop 1/, New Mexico production, 1954-1963, and preliminary 2/ 1964

Year	Production	Year	Production
	1,000 bu.		1,000 bu.
1954	760	1959	480
1955	580	1960	280
1956	540	1961	625
1957	640	1962	570
1958	740	1963	450
		1964 (Prelm.)	1,200

1/ Estimates of crop refer to the total production of apples in the commercial areas of the State.

2/ Crop Production, release as of 11/10/64.

Source: Statistical Reporting Service, Crop Reporting Board, USDA.

In 1963 the New Mexico Crop and Livestock Reporting Service completed the first comprehensive survey of New Mexico apple orchards. The survey showed that apple production in this State was much larger than had been thought. Even though many areas had practically a complete crop failure in 1962 due to early spring frost, notably in San Juan and Sante Fe Counties, commercial production for the State totaled 570,000 bushels. This included 27,000 bushels not harvested because of low prices. Grower surveys during the fall of 1962 indicated that the State, as a whole, harvested about a third of a full crop.

Thus potential production, with favorable conditions all season throughout the State, would approximate 1.7 million bushels. On the basis of 228,000 bearing trees in the fall of 1962, this would mean an average of 7.5 bushels per bearing tree.

Sixty-five percent of the apple trees in the Espanola Valley are of the Red Delicious variety which is the most popular of U.S. apples. Table 3 shows the number of trees by varieties both in the Espanola Valley and the State.

Table 3. - New Mexico apples, commercial crop: Number of trees by varieties in the Espanola Valley and State, 1963

Varieties	Rio Arriba	Sante Fe	Total Espanola Valley	State total
Red Delicious	76,900	11,800	88,700	190,000
Rome Beauty	8,500	4,300	12,800	46,000
Golden Delicious	7,600	1,250	8,850	28,000
Jonathan	7,600	2,100	9,700	25,000
Stayman	5,300	3,150	8,450	18,000
Winesap	2,700	750	3,450	8,200
Ben Davis and Gano	2,900	200	3,100	5,000
Misc. and unknown	1,800	550	2,350	9,800
Total	113,300	24,100	137,400	330,000

The apple survey points up the high potential production for the Espanola Valley evidenced by 55,800 non-bearing apple trees in this area out of a State total of 102,000 non-bearing trees for 1962 (table 4). The frost hazard is also vividly portrayed as illustrated by a 0.1 bushel production per bearing tree for Sante Fe County in the Espanola Valley compared with 2.5 bushels per bearing tree for the State.

Table 4. - New Mexico apples, commercial crop: Production, trees, and yield per tree in the Espanola Valley and the State, 1962

Area	Production	Number of trees		Production per bearing tree
		Non-bearing	Bearing	
	Bushels	(7 yrs. or less)	(8 yrs. or more)	Bushels
Rio Arriba	155,800	47,000	66,300	2.3
Sante Fe	1,200	8,800	15,300	.1
Total (Espanola Valley)	157,000	55,800	81,600	1.9
State total	570,000	102,000	228,000	2.5

Some of the apple growers in the Espanola Valley area fail to observe the proper cultural practices such as spraying the trees. As a result the quality of their crop suffers. This reluctance to take proper care of the tree stems from the cost of equipment, chemical sprays, and other supplies needed and the possibility of a crop failure due to unfavorable weather conditions.

Storage Facilities and Marketing Information

The 1963 apple survey by the New Mexico Crop and Livestock Reporting Service showed that there were facilities available in the State for storing approximately 57,000 bushels of apples under refrigeration. These storage facilities are slightly understated because of the approximately 10 percent of orchardists which were not interviewed. Non-interviewees were mostly operators of relatively small orchards. Of the 570,000 bushels produced in 1962 by commercial operators, only about 1 percent was held for sale by November 1.

The marketing statistics included with the proposed project indicated that generally most of the fruit grown in the area is sold to truckers who buy directly from the farmer in the field, or at roadside stands to passing motorists, or to produce jobbers. Due to lack of cold storage facilities, growers are forced to sell their crop when it is ripe, usually at a low price, or risk spoilage.

The apple survey by the New Mexico Crop Reporting Service reported that approximately one-half of the commercial apple crop from Rio Arriba County in the Espanola Valley was sold to the wholesale trade as packed fruit in 1962. In terms of prospective large scale marketing operations, this was considerably better than for the State which reported only about one-third of the crop distributed in this fashion (table 5).

Table 5. - New Mexico apples, commercial crop: Methods of disposition of 1962 crop for the Espanola Valley Area of Rio Arriba and Sante Fe Counties compared with the State total

Area	Wholesale as packed fruit	Direct to truckers at orchard	Retail at farm or roadside stand	Home use or given away	Other 1/
	Percent of crop				
Rio Arriba	48.6	42.6	3.9	3.3	1.6
Sante Fe 2/	--	35.0	36.3	20.1	8.6
State	32.7	47.1	13.4	1.8	5.0

1/ Mostly trucked by growers to local retail outlets.

2/ Crop failure in 1962 for this County would alter normal marketing pattern.

If further analysis of the fruit marketing proposal is undertaken, such work might include study of New Mexico and U.S. prices. Such study could include comparisons of New Mexico and U.S. prices for apples. It may be noted that few of the data needed for such comparisons are publicly available.

Estimated Cost of Proposed Facilities

An important aspect in the planning of the proposed fruit project is to determine the approximate cost for the construction and equipment of adequate storage and packing facilities for the fruit growers in the Espanola Valley.

Table 6 shows the estimated construction cost for an 80,000 bushel packing plant including provisions for a 25,000 bushel cold storage area as presented in the RC&D work plan.

It is my opinion that constructing a packing and storage plant at an estimated cost of $75,000, as presented in table 6, would be inadequate to fulfill the needs of the growers in the Espanola Valley with their approximate 4,900 acres in fruit orchards. In addition, the provision for a 25,000 bushel cold storage area would impose severe limitations on a marketing program designed to supply fruit for an extended period to chain stores and other buyers.

Table 6. - Construction cost of packing and storage plant based on 80,000 bushels of apples received, sorted, graded and packed with provision for 25,000 bushel cold storage area

Item	Estimated Cost
	Dollars
Land for plant - 10 acres	3,000
Site preparation:	
Grading, excavation and backfill, fill material, rolling and packing, and the like	1,000
Septic tank and drain field	450
Water well and pipe to plant	550
Construction of shed:	
Foundation floor, pilasters, roof ventilators, mill work, paint doors, ceiling, and the like	45,000
Installation of storage room wall insulation, cat walk, refrigeration unit, mounts, and the like	25,000
Packing room equipment 1/	
Total	75,000

1/ To be furnished by plant leasee.

Source: Northern Rio Grande Resource Conservation and Development Project Work Plan, August 1964.

Table 7 gives complete estimates of all costs, exclusive of the land, to construct a 50,000 box packing and storing house totaling $156,400 and a 100,000 box house totaling $219,700 in Yakima, Wash., area. These data should be carefully evaluated in relation to Espanola Valley conditions and growers' requirements.

Market Prospects

The apple survey has pointed up the overall weak marketing position of the apple growers in New Mexico. A key part of this marketing problem is that the present inadequate cold storage facilities permit only about 1 percent of the crop to be sold later than the first of November.

Table 7. - Estimate for construction of 50,000 and 100,000 box apple storage and packing houses 1/

Item	50,000 box house	100,000 box house
	Dollars	Dollars
Lot and site preparation:		
Site grading	150	150
Excavation and back fill	300	350
Gravel fill	700	970
Asphalt paving	2,370	2,530
Rolled gravel (parking lot)	600	1,270
Septic tank and drain field	450	550
Dry well	50	50
2" water tap and meter	170	170
Taxes, insurance, margin, and the like at 16 percent	760	960
	5,550	7,000
Packing room:		
Foundation, walls, pilasters, floor, roof construction, roof ventilators, insulation, millwork, and painting plus taxes, insurance, margins, and the like at 16 percent	53,450 2/	51,490 3/
Office (floor cost included above):		
Walls, ceiling, millwork, painting and vents plus taxes, insurance, margin, and the like at 16 percent	2,580	7,440
Cold-storage room:		
Foundation, walls, pilasters, floor, roof construction, insulation, painting, doors and cat walk plus taxes, insurance, margin, and the like at 16 percent	46,720	78,230
Machine room:		
Condenser platform, doors, machine mounts, painting plus taxes, insurance, margin, and the like at 16 percent	1,770	1,770
Covered area:		
Concrete floor, foundations, and steel work	9,360	14,200
Heating	6,550	7,820
Plumbing	1,900	2,070
Electrical	7,820	11,730
Refrigeration	20,700	37,950
Total	156,400	219,700

1/ Based on the construction cost index for Yakima, Wash., as of January 1, 1961.
2/ Includes an exact sizing line.
3/ Includes a group sizing line.

Source: Marketing Research Report No. 602, U.S. Department of Agriculture. 1964.

Adequate cold storage facilities would give the growers the opportunity to enhance their marketing position by contracting their fruit supplies over an extended period to chain stores and other available outlets. However, cold storage facilities may be only one step toward such a marketing program based on contracting of fruit supplies. Other factors must be considered in determining the adequacy of supplies for prospective buyers from an area which has an unfavorable weather history.

If the Velarde Fruit Growers Association succeeds in establishing fruit packing and storage facilities in the Espanola Valley, it should have some alternative arrangements for supplies when its own crop is seriously damaged by frost or hail. Past history has indicated that a freeze may practically wipe out the fruit crop in one segment of New Mexico and yet fail to reach another area. So the maintenance of good business relations with nearby fruit areas for supplementing supplies may be of invaluable assistance to the association.

An added challenge to the marketing prospects on apples is indicated by the expected increase in U.S. apple production for the next 5 years or more. This production outlook is based on fruit tree censuses which recorded many young trees planted during the 1950's and 1960's.

The growers have also considered other alternatives for marketing their fruit crops. For example a local representative of a cooperative organization contacted a produce manager of a large baby food company in regard to utilizing the area's apple supply. Currently the possibilities do not appear to be favorable for this market approach.

Overall conclusions and recommendations about this proposal are at the end of this report.

PROPOSED CHILE PROCESSING PLANT IN THE ESPANOLA VALLEY, NEW MEXICO

The Espanola Valley Chile Growers applied to the Northern Rio Grande Resource and Development Committee for assistance in establishing a chile processing plant in the Espanola Valley. The association estimates that the proposed plant with freezing, canning, and dehydrating facilities would cost from $75,000 to $100,000. It realizes that in addition to plant facilities, an adequate market must be developed for the product to obtain the objectives of a steady income for chile growers and an added source of local employment.

The analysis and conclusions that follow rely greatly on the earlier work of persons in New Mexico and Colorado. These sources will be noted. I have collected this material up to date and present it with some conclusions.

Acreage and Production Statistics on Chile

Acreage and production statistics on chile are not reported by the New Mexico Crop and Livestock Reporting Service.

However, estimates on current and potential acreage, yield, and production have been prepared by the chile producers in the Espanola Valley under the supervision of their county agent. They estimate that approximately 375 acres are currently planted to chile in this valley. In assuming an average yield of 6 tons to the acre, their production estimate would approximate 2,250 tons of ripe green and red pods.

The acreage potential in the Espanola Valley is placed at an additional 1,000 acres over the current estimate. This would indicate that close to 1,400 acres could be planted to chile in the Espanola Valley area if the processing facilities and a market for the product can be established.

The 1959 Census of Agriculture reported the number of farms and acreage of chile by counties and States for 1954 and 1959. These data are shown in table 8 for Rio Arriba and Sante Fe Counties in the Espanola Valley, for Donna Anna County in which a processing plant is currently operating at Las Cruces, and for the State of New Mexico.

Table 8. - New Mexico chile: Number of farms, acreage, and average acres per farm by specified counties and State total, 1954 and 1959

Area	Farms reporting		Acres		Avg. acres per farm	
	1954	1959	1954	1959	1954	1959
Rio Arriba	203	91	181	105	0.9	1.2
Sante Fe	102	34	83	27	0.8	0.8
Total (Espanola Valley)	305	125	264	132	0.9	1.1
Donna Anna	114	80	457	501	4.0	6.3
New Mexico State	812	506	1,298	1,194	1.6	2.4

Market Prospects

The market demand for chile and chile products is somewhat of an unknown factor. Although chile is well accepted by the Spanish Americans in the local areas of New Mexico, the product has not been adequately market tested in interstate commerce.

I concur with the opinion of Gene Ott, Extension Specialist at New Mexico State University, that, if the proposed chile project is deemed feasible, a relatively small processing plant should first be established in the Espanola Valley area. The plant should be so constructed that the facilities could be expanded as markets are developed. This approach would offer some protection to these chile growers who are not in a financial position to risk a sudden large increase in their production based on a questionable market outlet for their product.

The established chile processing plant at Las Cruces in Donna Anna County has certain current advantages over the proposed plant in the Espanola Valley. The per acre yield of chile grown in Donna Anna County is approximately 50 percent higher than in the Espanola Valley. Also the average size chile plot in Donna Anna County is considerably larger as attested by the 1959 Census data showing 6.3 acres per farm compared with 1.1 acres per farm in the Espanola Valley (table 8).

The chile growers in the Las Cruces area were receiving considerably less per pound in marketing their product than the Espanola Valley growers. This was due to the difference in the marketing practices. The growers in the area of Las Cruces market their chile in volume through nearby wholesale channels. In contrast the Espanola growers sold their more limited quantities of chile at retail from roadside stands and by door to door peddling.

Sales of chile at wholesale require less time and effort than by the retail method. This time could be used by cultivating increased acreage of chile or other farming operations. However the Espanola growers must be willing to accept a somewhat lower price for their chile if they decide to increase their production and market their product in volume through wholesale channels.

Although the Espanola growers maintain their chile is of superior quality than that grown elsewhere, it may be difficult to convince the wholesale buyers of this claim in terms of obtaining a higher price for the product.

The chile crop has been produced in the Espanola Valley for many generations. It is marketed both as green and red chile. The red chile in this area is either tied into ristras (strings) or placed on the ground and then sun-dried. Sun-drying the red chile on the ground results in about [illegible] percent loss from molds and rot and makes it unacceptable for marketing in interstate commerce because of pure food and health regulations.

It would seem advisable to market test the processed chile on a small scale in several selected States. Perhaps an arrangement could be made to obtain a limited supply of processed chile from the Las Cruces plant for use in this test. The RC&D project planners as well as the Espanola Valley growers would then be in a better position to evaluate the feasibility of establishing a processing plant for chile.

Services Already Provided Chile Growers

Considerable assistance has already been given to the chile growers in the Espanola Valley. W. Y. Fowler, Secretary of the Cooperative Council of New Mexico, supplied Farmer Cooperative Service with a list of the following services provided by personnel from the State Extension Service and New Mexico State University:

1. Experimental results on chile varieties and cultural practices from test conducted by the Experiment Station substation at Espanola.
2. Results of on-farm chile demonstrations conducted by the Department of Agricultural Services, NMSU, have been provided.
3. A study of chile marketing practices in the Rio Grande Valley, conducted by the Agricultural Economics Department of NMSU, was summarized and adapted to the Espanola Valley.
4. The extension engineer developed information on chile processing facilities and processing techniques for the group. This information included estimates of facility costs and planned capacities.
5. An analysis of market potential of chile and chile production for the Espanola area was prepared by the farm and business management specialist. In addition, information was provided on the different organizational alternatives and the advantages and disadvantages of each.
6. Recommended chile production practices have been provided by the extension horticulturist.

These services and studies should be carefully evaluated and fully utilized in the development phase of the proposed chile project.

Raymond L. Anderson, Agricultural Economist at Colorado State University, prepared an economic appraisal of vegetable processing plants for Philip Lavato, the RC&D project coordinator, which should also prove helpful in considering the possibility of establishing the proposed chile processing plant.

Mr. Anderson made the following significant comments at the conclusion of his report.

"With the highly uncertain situation existing in the production, processing, and marketing of vegetables, it appears that to get a program such as this going, the whole program will need to be underwritten by some organization that does not depend upon returns from an investment in the very near future.

It is highly unlikely that all of the problems of production and processing could be worked out within a single processing season. Probably several seasons would have to go by before the operation could be a financial success. Thus a pilot program subsidizing both production and processing would be necessary to get the system operational. A subsidy arrangement involves the danger of the operation never being able to stand on its own, financially, so a definite cut-off date would have to be established at the out-set to demand efficiency as soon as possible."

CONCLUSIONS AND RECOMMENDATIONS

The fruit packing and storage plant proposal has a chance of success on economic grounds. The most apparent hazard involved is how weather conditions affect the required supply of fruit. This is particularly pertinent in the early years of the operation. A successful marketing program for the produce would, in the long run, require assurances of adequate supplies.

In my opinion, the work plan's construction cost estimates for the fruit packing and storage plant should be reappraised in terms of providing growers an adequate marketing program. The proposed provision for a 25,000 bushel cold storage area would impose severe limitations on marketing the fruit through the most rewarding sales outlets.

The fruit packing and storage proposal will require the strong support and loyalty of most commercial fruit growers if the decision is made to form a cooperative plant. Without such support the economic prospects of the proposal are further reduced and appear highly unfavorable. Growers must take the responsibility for financing and patronizing the cooperative.

After obtaining necessary initial funds from fruit growers and other sources the cooperative can be financed through a capital retain or by withholding a certain amount from patron returns. One method of insuring patronage would be to require grower members to execute a marketing contract in which they would agree to deliver a stipulated quantity of fruit. This would have the two-fold effect of insuring member support and a predetermined volume of fruit for the season's operation.

Growers must also be willing to adopt the production and handling changes that will help to assure the cooperative of high quality, uniform fruit.

The economic prospect for the chile proposal appears to be less attractive. Market demand for chile in interstate commerce is an unknown factor. Growers in the Espanola Valley have received higher returns for chile from their traditional marketing methods of roadside selling and house to house peddling than they could expect from commercial processing and marketing.

It is obvious that their present method of marketing requires considerable time and effort. But it may be difficult to get these growers to adopt and follow through a marketing plan that actually places a significant value on their time used in marketing.

Another uncertainity would be the commercial market value of the relatively higher quality but lower yielding variety of chile grown in the Espanola Valley in competition with other commercial producing areas.

The New Mexico Extension Service has been very helpful with their advice and assistance to the growers on these proposed projects. I understand that they are interested in continuing work in this area. Such continued work should be of considerable help to the projects.

The attitude of the growers does not appear to be conducive for establishing a successful cooperative in either of these two ventures at the present time. This stems in part from the unfavorable cooperative history in this area. It would now be difficult to gain the necessary loyalty, leadership, and enthusiasm for these relatively high risk proposals to succeed along cooperative lines.

In general, the growers will need additional education and training in the cooperative way of business to use as a steppingstone towards a successful cooperative venture.

For example, they should be provided with a full understanding of the basic difference between a cooperative and other types of organization. That is, a cooperative operates to perform needed services for members at cost, and its strength lies in member loyalty expressed through patronage.

In contrast, other types of businesses operate to return a profit on ownership capital. The owners are usually not the patrons of these businesses. The Federal Extension Service as well as the Farmer Cooperative Service have available educational publications on this as well as other cooperative aspects.

Success in either of these ventures would depend to a considerable extent upon the active planning and overall participation of growers at the local level. This process of grower participation in planning is essential for the prospects of either proposal to be at its best. Such grower participation will give the best possible indication of the prospects for member support, loyalty, and patronage.

A course of action is outlined below. This course of action carries through to a final decision to proceed in developing each of the two proposed marketing programs, one for fruit marketing and one for chile marketing and constructing necessary facilities for both. Parts of the economic analysis of the proposals may be refined as the planning involved in the course of action proceeds.

The economic prospects and matters of grower loyalty and enthusiasm are closely related to each other in both the fruit marketing and chile marketing proposals. The analysis in this report makes it seem uncertain that the planning for either proposal will proceed to a final decision to establish a marketing program.

If the project leaders decide to continue with the proposed projects they may consider the following course of action.

* Develop a plan of action stressing active grower participation in the programs from start to finish.
* Concentrate the primary effort on the proposed project for a fruit and storage and marketing facility.
* Determine the size of the plant facilities for the fruit proposal on the basis of the growers' marketing needs. I believe this would indicate a minimum need for the construction of a 50,000 box cold storage area with provision for future expansion. Adequate cold storage facilities would place the growers in a position to realize the

full potential of the proposed marketing plan to supply chain stores and other sales outlets with fruit over an extended period as well as protect them from selling fast when prices are depressed.

* If the plans materialize on the chile proposal, we suggest the establishment of a relatively small chile processing plant. The plant should be so constructed that the facilities could be expanded as markets are developed. This approach would minimize the danger of excess supplies in relation to market outlets.

* Provide detailed information to the growers on the different organizational possibilities including the advantages and disadvantages of each. If the growers decide to organize along cooperative lines, every effort must be made to convey to them the idea that they are the association and, consequently, they must actively support the program to insure success.

* Request further assistance from the New Mexico Extension Service. It is in a position to help and advise the growers on a closely coordinated basis.

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